

REMARKS

The applicant's remarks are in response to the Official Action dated July 12, 2004. The applicant would like to thank the Examiner for noting that claims 17-24, although are objected to as being dependent upon a rejected base claim, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response to this objection, applicant has rewritten claims 17, 20 and 23 so as to appear in independent form and, thus, claims 17-24 should be deemed allowable.

In the Official Action, the Examiner has also rejected claims 1-16 under 35 U.S.C. § 103(a) as being unpatentable over Ohuchi et al., U.S. Patent No. 6,673,651 ("*Ohuchi*") in view of Brooks, U.S. Patent Application No. 2003/0153122 ("*Brooks*"), in view of Distefano, U.S. Patent No. 6,709,895 ("*Distefano*"), and further in view of Tan et al., U.S. Patent Application No. 2003/0148597 ("*Tan*"). The Examiner essentially contends that by combining a plurality of these references, claims 1-16 of the present application are obvious.

With specific regard to claim 1, it is respectfully submitted that *Ohuchi* discloses each and every recitation except that, as acknowledged by the Examiner, *Ohuchi* does not disclose "a conductive member disposed between the first microelectronic element and the second microelectronic element, the conductive member being connected to at least one of the third terminals." The Examiner cites *Brooks* as teaching this recitation and further contends it would have been obvious to modify the device of *Ohuchi* utilizing the teachings of *Brooks* to render claim 1 obvious.

With respect to this rejection, it is respectfully submitted that *Ohuchi* and *Brooks*, either alone or in

combination, do not teach all the recitations included within claim 1 of the present application.

Claim 1 of the present application includes recitations directed to "a substrate underlying the first microelectronic element and a second microelectronic element, the substrate having first terminals, second terminals and at least one third terminal, the first contacts being connected to the first terminals and the second contacts being connected to the second terminals" Claim 1 also includes a conductive member connected to at least one of the third terminals. *Ohuchi* does not teach either of these limitations. *Ohuchi*, as asserted by the Examiner, includes a substrate 13 underlying the first microelectronic element 1B and the second microelectronic element 1A. The two microelectronic elements are attached to one another by an epoxy base plate 16. The contacts on the first microelectronic element 1A are not attached to terminals on substrate 13 but rather to terminals on epoxy base plate 16. (See col. 4, lns. 40-41.) Even if one were to assume that the contacts are indirectly connected to terminals on the circuit board through bumps 2, the circuit board of substrate 13 still does not include a first terminal, a second terminal and at least one third terminal for connecting to three different elements, namely a first microelectronic element, a second microelectronic element and a conductive member. This is because substrate 13 can only be interpreted as including two sets of terminals for connecting to a first microelectronic element and a second microelectronic element as shown in FIG. 1B. Therefore, *Ohuchi* does not teach a substrate having a first terminal, a second terminal and at least one third terminal and the terminals being connected to three different elements as included within claim 1 of the present application.

Brooks is cited for teaching a connective member disposed between the first microelectronic element and the second microelectronic element with the conductive member being connected to a third terminal. However, as previously mentioned, claim 1 of the present application includes a substrate having a first, second and third terminal. Additionally, each terminal is connected to a different element. *Brooks* teaches a first semiconductor device 204 attached to a package substrate 202 and a second semiconductor device 208 attached to a silicon interposer 206 which is attached to the first semiconductor device 204. Substrate 202 includes bond pads 226 for attaching to the first semiconductor device 204. Even if bond pads 226 are equivalent to a terminal, as used in the present application, substrate 202 does not include any additional terminals connecting to another element.

As shown in FIG. 2, *Brooks* actually teaches away from placing three sets of terminals on a substrate and attaching three different elements to the three different sets of terminals. This is because in *Brooks*, the bond pads 216 of the semiconductor device 208 are attached to bond pads 214 located on interposer 206, via wires 222. Subsequently, bond pads 214 are connected to bond pads 210 located on first semiconductor device 204 via various pads and wires. Only first semiconductor device 204 is taught as having bond pads connected to terminals located on substrate 202. Thus, *Brooks* does not include a substrate having a first terminal, a second terminal and at least one third terminal for connecting to different elements.

The Official Action does not allege that either *Distefano* or *Tan* offers anything relevant to claim 1 instead.

Distefano and *Tan*, are cited only as teaching various recitations included within certain dependent claims. Those referenced also do not teach a microelectronic assembly having a substrate with three different terminals for connecting to three

different elements, in conjunction with a first microelectronic element facing a first direction and a second microelectronic element facing a second direction. Specifically, the embodiments of *Distefano* relied upon in the Official Action, disclose a packaged microelectronic assembly having a single microelectronic element and thus do not include the recitations of claim 1.

Tan, although it may be argued, discloses attaching three elements to three terminals located on a substrate, as shown in FIG. 3, is limited in that the three individual elements all face the same direction.

Therefore, claim 1 of the present application should be deemed to contain patentable subject matter. As such, claims 2-16 depend from claim 1 and, thus, include all the recitations included within claim 1. Therefore, claims 2-16 for reasons consistent with those expressed with regard to claim 1, should also be deemed to contain patentable subject matter.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that the Examiner telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which the Examiner might have.

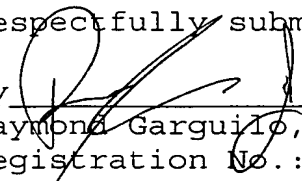
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If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: November 19, 2004

Respectfully submitted,

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